

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The subject matter here pertains to a packaging filling apparatus in which a web-form packaging material having a laminated structure and a conductive layer adjacent to a sealing property thermoplastic layer is longitudinally sealed to be formed into a tubular shape. The packaging filling apparatus comprises a transversal sealing apparatus which performs, at longitudinally spaced apart locations on the tube, transversal sealing in a transversal direction of the tube, forming transversal sealing bands on the tube. A cutting apparatus cuts the tube in the transversal bands to produce a first forming body which is subsequently formed into a packaging filling container. The transversal sealing apparatus comprises a high-frequency oscillator, a controller connected to the high-frequency oscillator, and an inductor connected to the high-frequency oscillator that receives output from the high-frequency oscillator to generate a magnetic field in the packaging material. The transversal sealing apparatus also includes a sealing quality control means transmitting a control signal to the controller based on a statistical relation between a plurality of different effect factors affecting quality of a transversal sealing and the quality of the transversal sealing. The controller controls the high-frequency oscillator based on the control signal from the sealing quality control means.

Claims 7-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Papina et al ("Papina," U.S. Patent No. 5,787,681) in view of Simmons (U.S. Patent No. 3,925,139). Papina discloses a sealing condition monitoring apparatus which detects a defect in a sealing due to entry of foreign matter or due to a defect or

malfunction of sealing apparatus. The apparatus includes a counter bar 30 and an inductor 19 which serves as a sealing bar. The inductor 19 includes first and second induction heating bodies 31, 32. A power supply circuit 34 supplies the first and second induction heating bodies 31, 32 with a high-frequency voltage during operation and is connected to a controller 36, which controls the high-frequency voltage. A sheet-shaped sensor 38 is disposed on the surface of the counter bar 30 and detects pressing forces applied to the packaging material 11. The controller 36 stores master data regarding the pressure to be applied to the material 11. When the pressure detected by sensor 38, as compared to the corresponding master data, is considerably large, an alarm is sounded or the sealing apparatus is stopped.

In rejecting Claim 7, the Official Action takes the position that a signal measured by the pressure sensor 38 of Papina corresponds to an effect factor affecting the quality of the seal. The Official Action correctly recognizes that Papina fails to disclose a control signal transmitted to a controller based on a statistical relation between a plurality of different effect factors. However, the Official Action relies on the disclosure Simmons and concludes that it would have been obvious to a person having ordinary skill to include such a feature in Papaina.

Simmons discloses a seal monitoring apparatus used in a packaging machine as a quality control device. The apparatus includes a sensor or sensors which monitor parameters controlling the formation of a seal on a packaging material. Specifically, parameters are monitored which determine the quality of a heat seal formed by jaws 16, 18. Such parameters include the temperature of a film F and the pressure which the jaws 16, 18 apply to plies of the film F.

Claim 7, as amended, provides for a transversal sealing apparatus comprising, *inter alia*, sealing quality control means connected to the controller to transmit a control signal to the controller based on a statistical relation between a plurality of different effect factors affecting the quality of the transversal sealing and the quality of the transversal sealing. The effect factors affecting the quality of the transversal sealing comprise effect factors A, which include a moisture percentage contained in the web-like packaging material, with or without a laminated metal evaporated film, temperature of the fluid product filled therein, characteristics of the sealing thermoplastic layer of the web-like packaging material and thickness of the conductive layer, and effect factors B which include an amount of energy output from the high-frequency oscillator and output impedance from the high-frequency oscillator. The combination of Papina and Simmons fails to disclose these features together with the other features recited in Claim 7.

Features similar to those now recited in Claim 7 were previously recited in Claims 8 and 9, which are now canceled. The Official Action rejected Claim 8 and 9 noting that in order to provide a proper seal, the controller means 36 of Papina "must" have a set of control or master data for each of the effect factors recited, so that upon receiving data transmitted from the sensors, the controller would compare the received data with the master data in order to adjust the operating parameters. Thus, it appears the Official Action takes the position that these features are inherent in Papina.

The fact that a certain result or characteristic may occur or be present in the cited reference is not sufficient to establish inherency of that result or characteristic. In Papina, upon detection of a large difference between received data and the

master data, an alarm is sounded and/or the apparatus is shut down. Column 5, line 38. Thus, there is no suggestion that the controller would adjust the operating parameters automatically. Not only does Papina fail to disclose these factors, but these factors are not necessary in Papina as the apparatus is not automatically controlled to change operating parameters. For at least these reasons, the factors recited in amended Claim 7 are not inherent in Papina. Simmons also fails to disclose these effect factors.

Additionally, neither Papina nor Simmons discloses effect factors comprising two groups of effect factors: effect factors A and effect factors B. In a non-limiting embodiment described in the present application, effect factors A may be measured either during or prior to the operation of the packaging filling apparatus, while effect factors B are effect factors that may be measured in real time manner. Neither Papina nor Simmons show this.

Further still, Claim 7 provides that there is a statistical relation between a plurality of different effect factors affecting quality of the transversal sealing and the quality of the transversal sealing. In order for there to be a statistical relation between the effect factors that affect the quality of the transversal sealing and the quality of the transversal sealing itself, there must be some quantitative value of the seal to determine quality. In both Papina and Simmons, parameters that may affect the quality of the seal are measured. However, there is no value to the parameters of the seal to provide a statistical relationship between the two. In other words, parameters that affect the seal are monitored in order to ensure proper sealing function. When one of the parameters varies in manner that may affect the seal, an alarm is sounded or the apparatus is shut down (Papina), or parameters may be

adjusted to correspond to a pre-selected value (Simmons). In the arrangements of Papina and Simmons, the parameters are only compared to preset parameter values. Thus, no statistical relation is provided between the parameters and the quality of the seal. For at least this reason, withdrawal of this rejection is respectfully requested.

Independent Claim 11, as amended, recites features similar to those now recited in Claim 7. For the reasons discussed above, withdrawal of the rejection of Claim 11, and allowance of the Claim are respectfully requested.

Claims 10 and 14 depend from Claims 7 and 11, respectively, which are allowable. Based at least upon their dependency from allowed claims, Claims 10 and 14 are also allowable.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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